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**SYSTEM, METHOD AND COMPUTER PROGRAM PRODUCT FOR USER-
SPECIFIC ADVERTISING IN A SUPPLY CHAIN MANAGEMENT
FRAMEWORK**

FIELD OF THE INVENTION

The present invention relates to information storage and processing systems, and more particularly, relates to the management of supply chains using such systems.

BACKGROUND OF THE INVENTION

Many types of manufacturing database management and inventory control systems exist today. Each of these systems views the process from the narrow viewpoint of the goals of such a system. For example, inventory control processes tend to determine when the inventory of an item is projected to be depleted and when to order goods to prevent such depletion. The inventory control process does not generally take into account the problems associated with availability of materials and machines to satisfy the inventory demand. On the other hand, the manufacturing control process considers the availability problem but does not take into account the effect of a sales promotion that will deplete an inventory faster than projected. A marketing department in preparing a sales promotion will often not consider the effect that promotion will have on availability, inventory and profit margin but tends to focus on sales goals. What is needed is a system that will support managers with each of these view points in understanding the effect of the various decisions that can be made on the supply chain as a whole both currently and into the near future.

Supply chain information flows today are fragmented, limited, and, in some cases, non-existent. The lack of timely communication between the different participants in the supply chain has resulted in higher costs for the system, for example, by limiting its ability to adequately measure distributor performance or to analyze promotion and new product activities, e.g., sales success, etc. In addition, the system continues to suffer from excess inventories and waste, unnecessary stock outs and rationing of products. A company cannot effectively react to these issues because the information that is needed to make sound management decisions is not available when it is needed.

From a marketing perspective, this lack of information has significantly hampered a company's ability to evaluate marketing tactics, post-program. Such companies also do not possess historical data that can assist it in developing marketing strategy and related plans, and understanding the essence of a brand.

Today, there is limited access to, and limited participation in, supply chain information systems by restaurants, franchisees, distributors, suppliers, etc. The infrastructure for supply chain information systems is inadequate. Restaurant point-of-sale (POS) systems are diverse and do not allow for data flows and the resulting analysis. At any point in time, it is not known how much product is selling, when it is selling or where it is selling. As long as this situation is allowed to continue, activities throughout the supply chain will continue to be reactive, error-prone, time-consuming and costly.

SUMMARY OF THE INVENTION

A system, method and computer program product are disclosed for advertising in a network-based supply chain management framework in which data is received utilizing a network from a plurality of stores of a supply chain. A user is allowed to access the data
 5 utilizing a network-based interface. The user accessing the network-based interface is identified and advertising is presented to the user in accordance with the identification.

In an aspect, the network includes the Internet. In another aspect, the user may be a supplier, a distributor, and/or a store. In such an aspect, the advertising advertises the
 10 sale of products required for the production of the goods produced by the stores. The advertising may also be conducted by at least one of the users. In an additional aspect, a charge may be required for the advertising.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1A illustrates an electronic reporting and feedback system according to an embodiment of the present invention;

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Figure 1B illustrates an electronic reporting and feedback system for restaurants according to an illustrative embodiment of the present invention;

Figure 2 is a flowchart of a process for normalizing data in a supply chain management framework in accordance with an embodiment of the present invention;

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Figure 3 is a flowchart of a process for reporting in a network-based supply chain management framework in accordance with an embodiment of the present invention;

Figure 4 illustrates an infrastructure for web services according to a preferred embodiment of the present invention;

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Figure 5 is a flowchart of a process for managing a supply chain utilizing a network in accordance with an embodiment of the present invention;

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Figure 6 is a flowchart of a process for tracking a performance of distributors in accordance with an embodiment of the present invention;

Figure 7 is a flowchart of a process for tracking a performance of suppliers in accordance with an embodiment of the present invention;

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Figure 8 is a flowchart of a process for tracking the performance of suppliers and distributors in a plurality of marketplaces in a supply chain management framework in accordance with an embodiment of the present invention;

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Figure 9 is a flowchart of a process for forecasting the sale of goods in a store utilizing a network-based supply chain management framework in accordance with an embodiment of the present invention;

- 5 Figure 10 is a flowchart of a process for inventory management utilizing a network-based framework in accordance with an embodiment of the present invention;

- Figure 11 is a flowchart of a process for providing feedback on forecasting relating to the sale of goods in a store utilizing a network-based supply chain management framework in accordance with an embodiment of the present invention;
- 10

Figure 12 illustrates an integrated supply chain analysis model according to an embodiment of the present invention;

- 15 Figure 13 is a flowchart of a process for planning promotions according to one embodiment of the present invention;

Figure 14 is a flowchart of a process for assessing market trends in a supply chain management framework in accordance with an embodiment of the present invention;

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Figure 15 is a flowchart of a process for collecting data to forecast sales in a supply chain in accordance with an embodiment of the present invention;

- Figure 16 is a flowchart of a process for tracking the sale of goods in a store utilizing a network-based supply chain management framework in accordance with an embodiment of the present invention;
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- Figure 17 is a flowchart of a process for cost reporting using a network-based supply chain management framework in accordance with an embodiment of the present invention;
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Figure 18 is a flowchart of a process for forecasting the sale of goods in accordance with an embodiment of the present invention;

5 Figure 19 is a flowchart of a process for evaluating a success of a promotion utilizing a network-based supply chain management framework in accordance with an embodiment of the present invention;

10 Figure 20 illustrates levels of integration between the supply chain coordinator and retail management;

Figure 21 is a flow diagram depicting integration ownership;

15 Figure 22 illustrates an electronic reporting and feedback system according to a preferred embodiment of the present invention;

Figure 23 is a flowchart of a process for raw product supply chain reporting in accordance with an embodiment of the present invention;

20 Figure 24 is a flow diagram illustrating basic communication and product movement according to an illustrative embodiment of the present invention;

Figure 25 is a flow diagram illustrating advanced communication and product movement according to an illustrative embodiment of the present invention;

25 Figure 26 illustrates a Sales Forecast Worksheet presenting historical data and projected data;

30 Figure 27 depicts a Promotion Monitoring Worksheet illustrating statistics such as variance from expected levels;

Figure 28 is a flowchart of a process for identifying goods in a network-based supply chain management framework in accordance with an embodiment of the present invention;

- 5 Figure 29 is a flowchart of a process for generating supply chain statistics in accordance with an embodiment of the present invention;

Figure 30 depicts a sample report for a distribution center;

- 10 Figure 31 illustrates a Data Quality report;

Figure 32 illustrates a distributor ranking report;

Figure 33 depicts a sample Supplier report;

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Figure 34 illustrates a Data Quality report;

Figure 35 illustrates a distributor ranking report that provides statistics on the number of orders filled, on-time deliveries, and perfect orders delivered;

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Figure 36 illustrates a Food Cost Summary report that compares the actual cost of food against a projected cost;

- 25 Figure 37 is a flowchart of a process for promotion reporting in a network-based supply chain management framework in accordance with an embodiment of the present invention;

Figure 38 is a flowchart of a process for order confirmation in a supply chain management framework in accordance with an embodiment of the present invention;

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Figure 39 is a flowchart of a process for advertising in a network-based supply chain management framework in accordance with an embodiment of the present invention;

5 Figure 40 is a flowchart of a process for advertising in a network-based supply chain management framework in accordance with an embodiment of the present invention;

10 Figure 41 is a flowchart of a process for generating revenue utilizing a network-based supply chain management framework in accordance with an embodiment of the present invention;

Figure 42 is a flowchart of a process for generating revenue utilizing a network-based supply chain management framework in accordance with an embodiment of the present invention;

15 Figure 43A is a flowchart of a process for an auction function utilizing a network-based supply chain management framework in accordance with an embodiment of the present invention;

20 Figure 43B is a flow diagram of a process for utilizing market demand information for generating revenue;

Figure 43C is a flow diagram of another process for generating revenue according to an embodiment of the present invention;

25 Figure 43D is a flow chart of a process 4386 for risk management in a supply chain management framework;

30 Figure 44 illustrates an exemplary system with a plurality of components in accordance with one embodiment of the present invention;

Figure 45 is a schematic diagram of a hardware implementation of one embodiment of the present invention;

5 Figure 46 is a flowchart of a process for providing network-based supply chain communication between stores, distributors, suppliers, a supply chain manager, and a corporate headquarters in accordance with an embodiment of the present invention;

10 Figure 47 is a flow diagram of a process for providing network-based supply chain communication according to another embodiment of the present invention;

Figure 48 is a flowchart of a process for providing a restaurant supply chain management interface framework in accordance with an embodiment of the present invention;

15 Figure 49 is a schematic illustration of an exemplary supply chain coordinator web site start page in accordance with an embodiment of the present invention;

Figure 50 is a schematic illustration of an exemplary supply chain coordinator Members' Front Page in accordance with an embodiment of the present invention;

20 Figure 51 is a flowchart of a process for providing a supplier interface in accordance with an embodiment of the present invention;

25 Figure 52 is a flowchart of a process for providing a distributor interface in accordance with an embodiment of the present invention;

Figure 53 is a schematic illustration of an exemplary POS Implied Daily Usage – Distributor report that may be displayed in the supply chain coordinator web site in accordance with an embodiment of the present invention;

Figure 54 is a schematic illustration of an exemplary local promotion summary by distribution center report that may be displayed in the supply chain coordinator web site in accordance with an embodiment of the present invention;

- 5 Figure 55 is a schematic illustration of an exemplary POS implied daily usage - supplier report that may be displayed in the supply chain coordinator web site in accordance with an embodiment of the present invention;

- Figure 56 is a schematic illustration of an exemplary retailer landed cost verification
10 report that may be displayed in the supply chain coordinator web site in accordance with an embodiment of the present invention;

- Figure 57 is a flowchart of a process for navigating a user in a network-based supply chain management interface in accordance with an embodiment of the present invention;
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Figure 58 depicts a high level view of ISCM communications according to an illustrative embodiment of the present invention;

- Figure 59 is a flowchart of a process for tracking the shipment of goods in a network-
20 based supply chain management framework utilizing barcodes in accordance with an embodiment of the present invention;

Figure 60 illustrates the ISCM in the context of security and access management;

- 25 Figure 61 sets forth the members of the ISCM community and their relationship;

Figure 62 is a flowchart of a process for selecting suppliers in a supply chain management framework in accordance with an embodiment of the present invention;

- 30 Figure 63 illustrates a multi-level, complex member organization;

Figure 64 is a flowchart of a process for contract enforcement in a supply chain management framework in accordance with an embodiment of the present invention;

5 Figure 65 is a flowchart of a process for monitoring distributor activity in a supply chain management framework in accordance with an embodiment of the present invention;

Figure 66 is a flowchart of a process for monitoring supplier activity in a supply chain management framework in accordance with an embodiment of the present invention;

10 Figure 67 is a flowchart of a process for a bulletin board feature in a supply chain management framework in accordance with an embodiment of the present invention;

Figure 68 is a flowchart of a process for a catalog feature in a supply chain management framework in accordance with an embodiment of the present invention;

15 Figure 69 is an outline of an approach for mapping customers directly to solution design;

Figure 70 is a flowchart of a process for electronic invoice auditing in a supply chain management framework in accordance with an embodiment of the present invention;

20 Figure 71 is a flowchart of a process for providing a network-based supply chain interface capable of maintaining the anonymity of stores in the supply chain in accordance with an embodiment of the present invention;

25 Figure 72 shows several applications for the web portal;

Figure 73 shows an expanded view of the portal from a security and access control perspective;

30 Figure 74 is a flow diagram showing how group and roles manage access;

Figure 75 is a schematic illustrating features and functions across web, network and system areas;

Figure 76 is a schematic diagram showing a validation of users on a web portal;

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Figure 77 graphically shows how user roles are managed in a multi-community environment;

Figure 78 illustrates a schematic showing the protection of resources with a central policy server, a separate user directory, and the integration of affiliate sites through an agent client;

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Figure 79 illustrates a policy based security architecture in accordance with one embodiment of the present invention;

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Figure 80 is a flowchart of a process for a secure supply chain management framework in accordance with an embodiment of the present invention;

Figure 81 shows a schematic with attribute setting through a web interface;

20

Figure 82 illustrates a flow diagram for assigning default privileges;

Figure 83 shows a Zen diagram illustrating the intersection of privileges;

Figure 84 illustrates a diagram showing a system, supply chain member, retail manager, the supply chain coordinator, supplier, and distributor root nodes;

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Figure 85 illustrates another diagram showing groups within domains;

Figure 86 shows still another diagram showing hierarchies in accordance with one embodiment of the present invention;

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Figure 87 shows a process for hierarchy management, in accordance with one embodiment of the present invention;

- 5 Figure 88 depicts a hierarchy in the supply chain portal management, in accordance with one embodiment of the present invention;

Figure 89 illustrates the retail outlet manager as part of the supply chain coordinator hierarchy, in accordance with one embodiment of the present invention;

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Figure 90 is a schematic showing the process by which cross-domain access rights are granted;

Figure 91 is a diagram that shows a process flow for an administrative function;

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Figure 92 is a flowchart of a process for updating information in a supply chain management framework in accordance with an embodiment of the present invention;

- 20 Figure 93 is a flowchart of a process for managing a health and personal care products supply chain utilizing a network in accordance with an embodiment of the present invention;

Figure 94 is a flowchart of a process for managing an electronics and appliances supply chain utilizing a network in accordance with an embodiment of the present invention;

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Figure 95 is a flowchart of a process for managing a transportation equipment supply chain utilizing a network in accordance with an embodiment of the present invention;

- 30 Figure 96 is a flowchart of a process for managing a home products supply chain utilizing a network in accordance with an embodiment of the present invention;

Figure 97 is a flowchart of a process for managing a food and beverage supply chain utilizing a network in accordance with an embodiment of the present invention;

5 Figure 98 is a flowchart of a process for managing a machinery supply chain utilizing a network in accordance with an embodiment of the present invention;

Figure 99 is a flowchart of a process for managing an sporting good supply chain utilizing a network in accordance with an embodiment of the present invention;

10 Figure 100 is a flowchart of a process for managing a chemical supply chain utilizing a network in accordance with an embodiment of the present invention;

15 Figure 101 is a flowchart of a process for managing a department store supply chain utilizing a network in accordance with an embodiment of the present invention;

Figure 102A is a flowchart of a process for managing an office product supply chain utilizing a network in accordance with an embodiment of the present invention;

20 Figure 102B is a flow diagram of a process for managing a book supply chain utilizing a network according to one embodiment of the present invention;

Figure 103 is a flowchart of a process for managing a gas station supply chain utilizing a network in accordance with an embodiment of the present invention;

25 Figure 104A is a flowchart of a process for managing a convenience store supply chain utilizing a network in accordance with an embodiment of the present invention;

Figure 104B is a flow diagram of a process for managing a toy supply chain utilizing a network according to an embodiment of the present invention;

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Figure 105 is a flowchart of a process for managing an entertainment media supply chain utilizing a network in accordance with an embodiment of the present invention;

5 Figure 106 is a flowchart of a process for managing an accommodation supply chain utilizing a network in accordance with an embodiment of the present invention;

Figure 107 is a flowchart of a process for a reverse auction in a supply chain management framework in accordance with an embodiment of the present invention;

10 Figure 108 is a flowchart of a process for tracking damaged goods in a supply chain management framework in accordance with an embodiment of the present invention;

Figure 109 is a flowchart of a process for allocating responsibilities in a supply chain management framework in accordance with an embodiment of the present invention;

15 Figure 110 is a flowchart of a process for determining product supply parameters in a supply chain management framework in accordance with an embodiment of the present invention;

20 Figure 111 is a flowchart of a process for reducing costs in a supply chain management framework in accordance with an embodiment of the present invention;

Figure 112 is a flowchart of a process for handling contracts in a supply chain management framework in accordance with an embodiment of the present invention;

25 Figure 113 is a flowchart of a process for centralizing a supply chain management framework in accordance with an embodiment of the present invention;

30 Figure 114 is a flowchart of a process for providing local distribution committees in a supply chain management framework in accordance with an embodiment of the present invention;

Figure 115 is a flowchart of a process for price auditing in a supply chain management framework in accordance with an embodiment of the present invention;

- 5 Figure 116 is a flowchart of a process for auditing performance in a supply chain framework in accordance with an embodiment of the present invention;

- Figure 117 is a flowchart of a process for providing an electronic mail virtual private network in a supply chain management framework in accordance with an embodiment of
10 the present invention;

Figure 118 is a flowchart of a process for secret pricing in a supply chain management framework in accordance with an embodiment of the present invention;

- 15 Figure 119 is a flowchart of a process for managing risk in a supply chain management framework in accordance with an embodiment of the present invention;

- Figure 120 is a flowchart of a process for product tracking in a supply chain management framework in accordance with an embodiment of the present invention;

- 20 Figure 121 is a flowchart of a process for auctioning surplus products in a supply chain management framework in accordance with an embodiment of the present invention;

- Figure 122 is a flowchart of a process for managing a supply chain utilizing a network in
25 accordance with an embodiment of the present invention;

Figure 123 is a flowchart of a process for managing a supply chain utilizing a network in accordance with an embodiment of the present invention;

- 30 Figure 124 is a flowchart of a process for disseminating calendar information in a supply chain utilizing a network in accordance with an embodiment of the present invention;

Figure 125 illustrates a graphical user interface for generating cost system components;

Figure 126 depicts a selection screen;

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Figure 127 illustrates an Add Items window displayed upon selecting Items from the Supply menu and New fro the selection screen;

Figure 128 illustrates a Landed Cost Report by Distribution Center;

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Figure 129 illustrates an Item/FOB button that calls up an FOB window;

Figure 130 depicts an FOB window;

15 Figure 131 illustrates a window for adding an FOB point;

Figure 132 depicts a screen for adding Distribution Centers;

20 Figure 133 is a flowchart of a process for creating cost system components in a supply chain utilizing a network in accordance with an embodiment of the present invention;

Figure 134 illustrates a matrix window for creating matrices;

25 Figure 135 illustrates a matrix that identifies the source and destination for a product in question;

Figure 136 illustrates an FOB matrix;

Figure 137 illustrates a contract matrix;

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Figure 138 depicts a Contract button;

Figure 139 depicts a minimum order matrix;

Figure 140 illustrates a shipping matrix;

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Figure 141 shows an Options menu;

Figure 142 illustrates a Notification toolbar button;

10 Figure 143 illustrates selection of a Multi-Item Price Notification;

Figure 144 is a flowchart of a process for utilizing cost models in a supply chain utilizing a network in accordance with an embodiment of the present invention;

15 Figure 145 depicts a New Item button;

Figure 146 illustrates a Contract/Buyer association screen;

Figure 147 depicts a contract schedule screen;

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Figure 148 illustrates a Generate button;

Figure 149 illustrates an Exhibit A button, which upon selection provides the Supplier with the "Approved Products" listing for the current contract;

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Figure 150 illustrates an Exhibit B button, which upon selection provides the detail on per case pricing and volume for each lane assigned to this Supplier;

Figure 151 shows a screen for selecting end dates to use on an exhibit;

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Figure 152 illustrates an Options drop down menu;

Figure 153 depicts an Exhibit C button for generating a report which lists product routing for each lane and any minimum order quantities;

- 5 Figure 154 is a flowchart of a process for creating a contract utilizing a supply chain graphical user interface in accordance with an embodiment of the present invention;

Figure 155 shows a Proposal submenu;

- 10 Figure 156 illustrates a Bid Proposal window used for generating a proposal;

Figure 157 illustrates toolbar buttons for adding, deleting and printing actions;

Figure 158 illustrates a page under the Items tab;

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Figure 159 illustrates the page under the Items tab upon selection of the Search button;

Figure 160 illustrates a page under the FOB Price tab for selecting FOB price component worksheets;

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Figure 161 depicts a window for managing Distribution Center usage;

Figure 162 is a flowchart of a process for creating a bid proposal utilizing a supply chain graphical user interface in accordance with an embodiment of the present invention;

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Figure 163 illustrates a Templates button which calls a Template window;

Figure 164 depicts the Template window called by the Templates button;

- 30 Figure 165 illustrates a window displayed upon selection of the Templates tab;

Figure 166 is an illustration of a Microsoft Word menu;

Figure 167 is an illustration of the page presented upon selection of the Create Bid tab;

5 Figure 168 shows a Create Bid button;

Figure 169 illustrates a drop down list box from which a user can select reports for viewing;

10 Figure 170 illustrates a Print button;

Figure 171 depicts a Print Bid button;

15 Figure 172 is a flowchart of a process for proposal reporting utilizing a supply chain graphical user interface in accordance with an embodiment of the present invention;

Figure 173 depicts a Least Cost toolbar button;

20 Figure 174 illustrates a standard query screen;

Figure 175 shows a Supply menu;

Figure 176 depicts a drop down list for changing Bid selection;

25 Figure 177 is a flowchart of a process for analysis creation utilizing a supply chain graphical user interface in accordance with an embodiment of the present invention;

Figure 178 illustrates a window displayed upon beginning an analysis;

30 Figure 179 depicts an option selection window;

Figure 180 illustrates a version button for creating new versions of analyses;

Figure 181 illustrates a verification window that appears upon selection of the version button;

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Figure 182 is a flowchart of a process for analysis version control in a supply chain management framework in accordance with an embodiment of the present invention;

Figure 183 depicts a tab page for adding and removing FOBs from an analysis;

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Figure 184 illustrates a portion of the Item tab page;

Figure 185 is a flowchart of a process for editing supplier information in a supply chain management framework in accordance with an embodiment of the present invention;

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Figure 186 illustrates a page that is displayed upon selection of the Item/FOB tab;

Figure 187 shows an Update button for updating cost information;

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Figure 188 is a flowchart of a process for adding components in a supply chain management analysis in accordance with an embodiment of the present invention;

Figure 189 is an illustration of an exemplary analysis window displayed upon selecting a Capacity tab;

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Figure 190 illustrates another analysis window;

Figure 191 is a flowchart of a process for managing supplier sites in a supply chain management framework in accordance with an embodiment of the present invention;

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Figure 192 is a depiction of an FOB pricing window;

Figure 193 depicts an illustrative FOB Volume Pricing screen;

Figure 194 depicts a Supplier Volume Pricing window;

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Figure 195 shows a Delivered Pricing screen;

Figure 196 is a flowchart of a process for pricing in a supply chain management framework in accordance with an embodiment of the present invention;

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Figure 197 is a depiction of a Projected Restaurant Growth screen;

Figure 198 illustrates a Projected Usage Estimation screen;

15 Figure 199 is a flowchart of a process for projecting distribution center usage in a supply chain management framework in accordance with an embodiment of the present invention;

Figure 200 illustrates an Excluding Lanes screen displayed upon selection of a Lane

20 Restrict tab;

Figure 201 is a depiction of a Forcing Lanes window;

Figure 202 depicts a message screen;

25

Figure 203 is a flowchart of a process for restricting lanes in a supply chain management framework in accordance with an embodiment of the present invention;

Figure 204 is an illustration of a Truckload Freight window displayed upon selection of a

30 TL Freight tab;

Figure 205 illustrates an LTL Freight page;

Figure 206 is a flowchart of a process for managing freight in a supply chain management framework in accordance with an embodiment of the present invention;

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Figure 207 depicts a restriction window;

Figure 208 is a flowchart of a process for imposing regional restrictions in a supply chain management framework in accordance with an embodiment of the present invention;

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Figure 209 shows a Routing button;

Figure 210 illustrates a Report Selection window;

15 Figure 211 is a flowchart of a process for product routing in a supply chain management framework in accordance with an embodiment of the present invention;

Figure 212 illustrates a Solve button;

20 Figure 213 illustrates the Report Selection window which allows selection of the report type;

Figure 214 illustrates a Report Name drop down list of related reports;

25 Figure 215 illustrates another Report Name drop down list of related reports;

Figure 216 shows a Report Selection window;

Figure 217 depicts a report name drop down list;

30

Figure 218 illustrates parameter entry fields for report generation;

Figure 219 shows a Retrieve button for retrieving a report;

Figure 220 is a flowchart of a process for comparison reporting in a supply chain
5 management framework in accordance with an embodiment of the present invention;

Figure 221 illustrates a Cost button;

Figure 222 is a depiction of a Cost Matrix Creation window;
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Figure 223 illustrates the Formula Pricing submenu of the Supply drop down menu;

Figure 224 illustrates a Formula Pricing window;

Figure 225 depicts the page displayed upon selecting the Pricing Tab;
15

Figure 226 shows a message window;

Figure 227 is an illustration of another message window;
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Figure 228 depicts a selection window to allow selection of the pricing data that the user
wants to copy over the current pricing;

Figure 229 is an illustration of the page displayed upon selection of the Freight Tab;
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Figure 230 is a depiction of the page displayed upon selection of the Formulas Tab;

Figure 231 illustrates the page displayed upon selection of the Block Cost Tab;

Figure 232 is a depiction of the page displayed upon selection of the Adjustments Tab;
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Figure **233** depicts toolbar icons used to insert or delete adjustments;

Figure **234** illustrates an RM Letter icon;

- 5 Figure **235** illustrates the Formula Maintenance window that is used to modify or add new formulas; and

Figure **236** illustrates a Formula Pricing submenu from which a user can open the Formula Maintenance window.

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DETAILED DESCRIPTION

The present invention allows participants in a supply chain for an enterprise or collection of enterprises to function as an integrated system. The Supply Chain model of the present invention is responsive and efficient, based on electronic access to critical information that is available when it is needed at various points throughout the Supply Chain. As a result the Supply Chain is highly flexible, reliable and user friendly, responsive to consumer demands, able to respond to short lead times and able to significantly lower Supply Chain costs.

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The present invention positions a Brand for growth, competition and profitability by installing and managing the infrastructure that facilitates accurate, timely and relevant information flows throughout the Supply Chain.

15 The present invention overcomes traditional difficulties with supply chain information flows, namely that the flow of information is fragmented, untimely, and/or nonexistent. Further, the present invention overcomes deficiencies in prior art supply chain information systems such as limited access; limited participation; and inadequate infrastructure; which result in the unavailability of accurate, timely management information from Supply Chain activities; business decisions not being based on the best information; unfavorable impact on the cost of products; and error prone, time consuming, and costly activities throughout the Supply Chain.

25 The organizational structure, technology applications and information systems that form portions of the Supply Chain are enablers that allow for effective management of the Supply Chain. The methodology of the present invention provides the means to efficiently capture, analyze and feed back timely Supply Chain data to the appropriate parties.

30 The claimed invention is applicable to many different industries, including but not limited to, pharmaceuticals, health and personal care products, computer and internet

technology, automotive, home product supply, food and beverage, telecommunications, machinery, air conditioning and refrigeration, chemical, department store supply, office product supply, aircraft and airline related industries, education, consumer electronics, hotel, gasoline stations, convenience stores, music and video, etc. For purposes of

5 illustration only, portions of the following description will be placed in the context of a Supply Chain for food services, including food distribution, retail outlet management and operation, and marketing. One skilled in the art will appreciate that the various embodiments and concepts of the present invention are applicable to a plethora of industries without straying from the spirit of the present invention. As such, the scope of

10 the present invention is to be in no way limited to food services only.

Overview

The present invention includes a supply chain management system involving at least one

15 supply chain participant. Supply chain participants include a supply chain manager. The supply chain manager may be a supply chain participant, a department of, division of or consultant for a supply chain participant, or an independent entity unrelated to the other supply chain participants. The supply chain manager may be allowed to exercise management rights without taking title or possession of any goods passing through the

20 supply chain.

Supply chain participants may also include brand owners, point of sale outlets, point of sale outlet owners, a cooperative or consortium of point of sale outlet owners, distributors, or suppliers. Suppliers may supply one or more of finished goods, partially

25 finished goods or raw materials.

The supply chain management system of the present invention includes six system components which may be integrated independently, on a parallel path, but ultimately are able to electronically interface with each other. Typically, a supply chain may include

30 retailers, distributors and suppliers or equivalents thereof.

The supply chain management system according to one aspect of the present invention, increases the Quality Of Service (QOS) to supply chain participants, lowers costs and adds new value to supply chain participants with its "predictive" nature based on statistically driven models, discussed below.

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Supply chain participants, as used herein, refers without limitation to stores and other vendors/outlets, distributors, suppliers, etc. Further, suppliers include suppliers of raw, partially finished, and finished goods.

10 In general, the supply chain management system integrates various components, which components may include:

1. In-Retailer Systems
2. Retailer/Distributor Electronic Interface
- 15 3. Supplier/Distributor Electronic Interface
4. Data Warehouse
5. Information Services
6. Web Architecture and Internet Access

20 It should be understood that some or all of these components or analogous components may also be applicable to various industries including those industries set forth above.

Figure 1A illustrates an electronic reporting and feedback system **100** according to an embodiment of the present invention.

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In-Retailer Systems support point of sale outlet owners **102** with Point of Sale (POS) and BOH hardware and software solutions, and provide leadership in the evolution of retailer systems to ensure electronic connectivity to the Supply Chain. This component enables electronic data collection of daily menu item sales for the information database. It also
30 enhances retailer operations by providing retail outlet managers with tools that help free their time to focus on the customers.

Retailer-Distributor Electronic Interface establishes an electronic purchasing system and thus “electronic commerce” between POS outlets **104** and distributors /“direct” suppliers **106,108**. This includes electronic order entry (via Web or BOH), order confirmation,
 5 product delivery/receiving, electronic invoicing, electronic wire payment transfers, data collection, and most important, contract compliance and distributor performance measurement, which assists in managing distributor performance.

Supplier-Distributor Electronic Interface facilitates the development of electronic
 10 commerce between system suppliers and distributors including electronic ordering and confirmations, electronic invoicing and payments and electronic supplier performance measuring and reporting. Electronic commerce between raw material suppliers **110** and suppliers is also provided.

15 Data Warehouse **112** is a central collection point that electronically collects and warehouses timely, critical Supply Chain information for all Supply Chain participants. This includes distributor and supplier performance measures, representations of daily outlet item sales with translations to specified product requirements, and inventory levels, sales history and forecasts at various points in the Supply Chain, thereby providing a
 20 basis for collaborative planning and forecasting. The data stored in the Warehouse is then available for quick, secure access.

Information Services analyzes **114**, organizes and feeds back Supply Chain data to meet the information needs of Supply Chain end users such as a brand owner **116**, the Supply
 25 Chain Coordinator (SCC) **118**, retail outlet management **120**. This includes information on Supply Chain performance, collaborative planning and forecasting, promotion planning and inventory management. Services that benefit franchisees include electronic invoice auditing, distributor performance reporting, food cost reporting and analysis, franchisee sales/cost comparables, and other reports. Information Services also
 30 determines a proper format in which to present the data so that it is in the most useful

form for the end user. It also works with Supply Chain users to develop/evaluate analytical/operational tools.

Web Architecture **122**—underlying all this electronic activity is technology, the web architecture with Internet access (through proprietary service or an Internet Service Provider (ISP)) that allows these electronic communications to take place efficiently and effectively. Encompassed in this component is the building of initial web applications and security for the Supply Chain.

Figure **1B** illustrates the electronic reporting and feedback system **100** of Figure **1A** adapted for restaurants according to an illustrative embodiment of the present invention. In this situation, the POS outlet comprises a restaurant **126**, a franchisee **124** is the POS outlet owner, and end users include restaurant management **128** and other end users **130**.

Figure **2** is a flowchart of a process **230** for normalizing data in a supply chain management framework. A plurality of data types are defined with each data type including parameters in operation **232**. Data is received utilizing a network from a plurality of POS outlets of a supply chain that relates to an amount of goods sold by the POS outlets in operation **234**. A format of the data is verified against the parameters of the defined data types in operation **236** and any discrepancies between the format of the data and the parameters of the defined data types are corrected for facilitating an analysis of the data in operation **238**.

In one aspect, the corrections may be logged. In another aspect, the discrepancies may be displayed utilizing a network-based interface. In a further aspect, discrepancies may be corrected by translating the format of the data in accordance with the parameters of the defined data types. In another aspect, the network may include the Internet. In an additional aspect, the corrected data may be displayed utilizing a network-based interface.

Figure 3 is a flowchart of a process 330 for reporting in a network-based supply chain management framework. Utilizing a network, data is received from a plurality of stores, distributors and suppliers of a supply chain in operation 332. The data is processed in operation 334. Subsequently, a request is received from a user for the processed data in operation 336. The user is then identified as either relating to a store, distributor or supplier in operation 338 and the processed data is formatted based on the identification of the user as a store, distributor or supplier in operation 340.

In one aspect, the format may includes a first format for the store, a second format for the distributor, and a third format for the supplier. In another aspect, the format may utilize a coding scheme unique to the user. In an additional aspect, the formatted, processed data may be made accessible via a network-based interface. In a further aspect, the network may include the Internet. In yet another aspect, the request may be received utilizing the network.

Figure 4 illustrates an infrastructure 400 for web services according to a preferred embodiment of the present invention. As shown, application services 402 are at the core of the infrastructure. Secondary components include hosting services 404, content delivery 406, and network services 408. Professional services 410 are provided for each of the components. Additional services can include support for electronic commerce, eMarketing, eSales, and eFulfillment.

Figure 5 is a flowchart of a process 530 for managing a supply chain utilizing a network. Data is received from a plurality of restaurants of a supply chain utilizing a network in operation 532. This data relates to the sale of goods by the restaurants. An electronic order form for ordering a plurality of goods is then generated based on the data in operation 534. The electronic order form is subsequently transmitted to at least one supply chain participant utilizing the network in operation 536. For example, the form can be transmitted to a distributor of the supply chain utilizing the network via a restaurant-distributor interface. The electronic order form can also be transmitted to at least one supplier of the supply chain utilizing the network via a distributor-supplier

interface. Information relating to at least one of the operations in the above process for managing the supply chain is tracked by the restaurant in operation **538**.

In one aspect, the data may be transmitted to the supply chain participants. In such an aspect, the data may be parsed to match each corresponding supply chain participant. The data may also be made accessible to the supply chain participant via a network-based interface. In another aspect, the data may be accessible to the supply chain participant only after verification of an identity of the supply chain participant. In an additional aspect, the tracked information may relate to each of said operations of the above process.

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Figure **6** is a flowchart of a process **630** for tracking a performance of distributors in which a plurality of distributors are registered in operation **632**. Data is received utilizing a network in operation **634**. This data relates to the distribution of goods to a plurality of stores by the registered distributors. A performance of the registered distributors is then tracked utilizing the data in operation **636**.

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In one aspect, the data may include delivery dates associated with the goods. In such an aspect, the performance may be tracked by comparing the delivery dates with a plurality of target dates. As another aspect, the performance may be tracked by comparing the delivery dates with delivery dates associated with other distributors. In another aspect, the performance may be displayed to the stores utilizing a network-based interface. In a further aspect, the data relating to the distribution of goods may be received from the stores.

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Figure **7** is a flowchart of a process **730** for tracking a performance of suppliers. In general, a plurality of suppliers are registered in operation **732**. Data is then received utilizing a network in operation **734**. This data relates to the supply of goods to a plurality of distributors by the registered suppliers. A performance of the registered suppliers is tracked utilizing the data in operation **736**.

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In an aspect, the data may includes inventory levels associated with the goods. As an aspect, the performance may be tracked by comparing the inventory levels with a plurality of target inventory levels. As another aspect, the performance may be tracked by comparing the inventory levels with inventory levels associated with other suppliers.

5 In another aspect, the performance may be displayed to the stores utilizing a network-based interface. In a further aspect, the data may be received from the stores.

Figure 8 is a flowchart of a process 830 for tracking the performance of suppliers and distributors in a plurality of marketplaces in a supply chain management framework. In

10 operation 832, a plurality of distributors and suppliers are registered each in one of a plurality of marketplaces with each marketplace involving the supply and distribution of at least one of a plurality of goods used by a plurality of stores. Data is received utilizing a network that relates to the distribution and supply of goods to the stores by the registered distributors and suppliers in each of the marketplaces in operation 834. The

15 received data is parsed based on marketplaces in operation 836 and a performance of the registered distributors and suppliers is tracked in each of the marketplaces utilizing the data in operation 838.

In one aspect, the data includes delivery dates associated with the goods. In such an

20 aspect, the performance may be tracked by comparing the delivery dates with a plurality of target dates. As another aspect, the performance may be tracked by comparing the delivery dates with delivery dates associated with other distributors. In another aspect, the performance is displayed to the stores utilizing a network-based interface. In a further aspect, the data includes inventory levels associated with the goods. In such an

25 aspect, the performance may be tracked by comparing the inventory levels with a plurality of target inventory levels. As another aspect, the performance may be tracked by comparing the inventory levels with inventory levels associated with other suppliers.

Results

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The present invention makes critical performance information available to the Supply Chain system. The timeliness and level of detail of this information enable the supply chain coordinator to manage distributors and suppliers at standards prior art systems have been unable to achieve before. For example, timely performance information is provided
5 against which Supply Chain management (coordinator) can take immediate action. Such performance information includes system inventory levels and movement, ordering activity, order fill rates, on-time deliveries, and product quality issues. Note that the supply chain coordinator may or may not hold an ownership interest in the other supply chain participants. Further, the supply chain coordinator does not need to be associated
10 with the other participants in any way other than in relation to supply chain management.

Significant opportunities exist for Supply Chain participants to realize substantial savings and marketing opportunities through improved speed to market for promotions and more responsive inventory management.

15 Further, retailer management is given online access to the full Supply Chain database, subject to maintaining the confidentiality of individual franchisees/ retailers. For the very first time, retail outlet management will be able to evaluate Supply Chain and retail outlet sales information to develop Brand menu and marketing program strategies. In addition,
20 another first, retailer management is allowed to evaluate the success of past marketing programs by comparing actual sales to forecasts and reviewing Gross Profit Margin analyses of programs.

According to an embodiment of the present invention, Supply Chain management is able
25 to provide online local promotion information to distribution centers, suppliers, Field Marketing, ADIs and Local Distribution Committees. This improves the speed to market for promotions and new products, as well as provides the ability to make ongoing program adjustments.

30 The advantages of being able to share and update a common data base at the convenience of all users provides enhanced coordination between all participants, improved planning,